

signal or with the smallest container in which several signals are packed.

(c) The largest carton or box in which the manufacturer ships signals must be marked with the following or equivalent words: "Keep under cover in a dry place."

(d) Compliance with the labeling requirements of this section does not relieve the manufacturer of the responsibility of complying with the label requirements of the Federal Hazardous Substances Act, 15 U.S.C. 1263.

**§ 160.066-10 Expiration date.**

Each approved signal must have an expiration date marked on it. That date must not be more than forty-two months from date of manufacture.

**§ 160.066-11 Approval procedures.**

(a) Red aerial pyrotechnic flare distress signals are approved under the procedures of subpart 159.005 of this chapter.

(b) The manufacturer must produce a lot of at least 100 signals from which samples for approval testing must be drawn. Approval testing must be conducted in accordance with the operational tests in §160.066-12 and the technical tests in §160.066-13. In order for the signal to be approved, the samples must pass both the operational and the technical tests.

(c) The approval tests must be performed by an independent laboratory accepted by the Commandant under Subpart 159.010 of this chapter.

[CGD 76-183a, 44 FR 73050, Dec. 17, 1979, as amended by CGD 93-055, 61 FR 13931, Mar. 28, 1996]

**§ 160.066-12 Operational tests.**

(a) The procedure for conducting operational tests is described in figure (1).

(1) An "accept lot" decision must be reached in order to pass the operational tests.

(2) If a "reject lot" decision is reached, the entire lot is rejected.

(3) Signals from "reject lots" may be reworked by the manufacturer to cor-

rect the deficiency for which they were rejected and be resubmitted for inspection. Records shall be kept of the reasons for rejection, the reworking performed on the "reject lot", and the result of the second test. Signals from "reject lots" may not, unless subsequently accepted, be sold or offered for sale as being in compliance with this specification.

(b) Each signal selected for the operational tests must be conditioned by:

(1) Being submerged under at least 25 mm (1 in.) of water for 24 hours without any protection other than its waterproofing; or

(2) If waterproofing is provided by a sealed plastic bag or other waterproof packaging, submersion under 25 mm (1 in.) of water for 24 hours in the packaging, followed immediately by submersion under 25 mm (1 in.) of water for 10 minutes with the signal removed from the packaging.

(c) After each signal selected has undergone the conditioning required by paragraph (b) of this section it must be fired as described by the manufacturer's operating instructions. The following data as observed must be recorded for each signal:

(1) Burning time of the pyrotechnic candle;

(2) Color;

(3) Whether the pyrotechnic candle burns out above, at, or below the level of launch.

(d) A signal fails the operational tests if:

(1) It fails to fire,

(2) The pyrotechnic candle fails to ignite,

(3) The pyrotechnic candle continues to burn after it falls back to the level of launch,

(4) The observed color is other than vivid red, or

(5) The burning time is less than 5.5 seconds.

(e) A lot is rejected if a "reject lot" decision is reached using Figure (1) and Table 1 after completion of the operational tests.

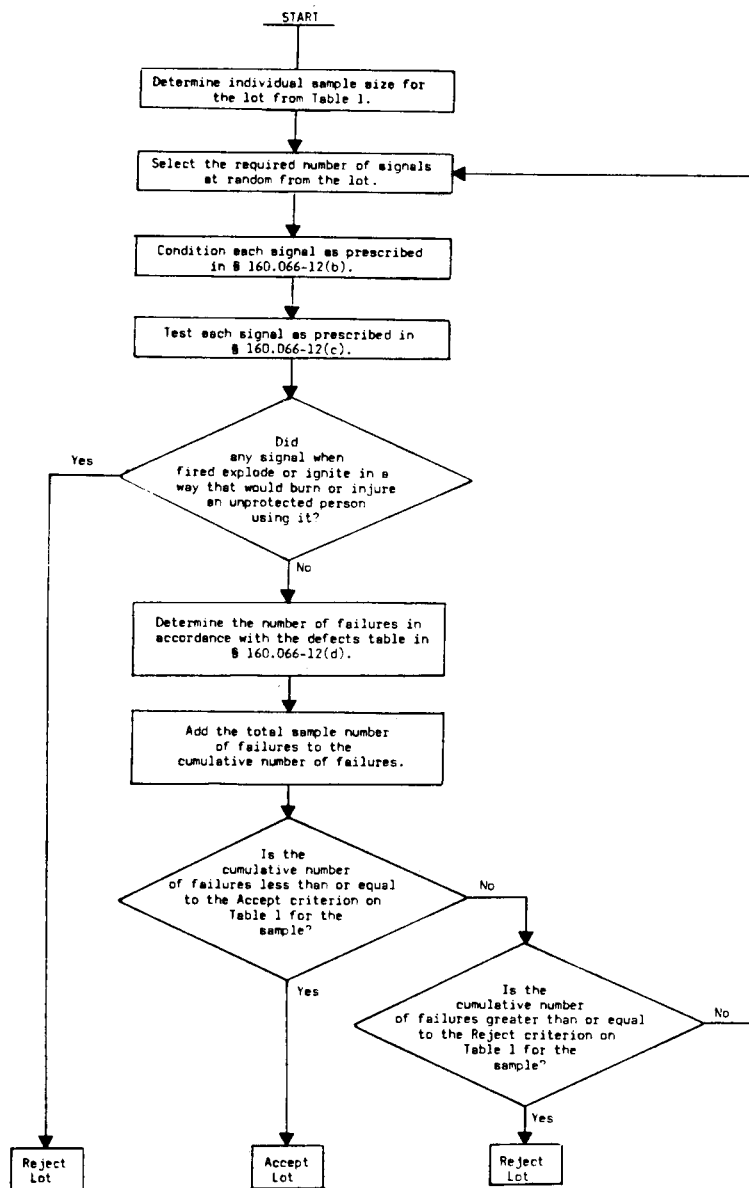


Figure 1. Operational test procedure.

TABLE 1—ACCEPT AND REJECT CRITERIA FOR OPERATIONAL TEST LOTS

Lot size	Individual sample size	Sample	Cumulative sample size	Accept <sup>1</sup>	Reject <sup>1</sup>
280 or less.	8	First .....	8	( <sup>2</sup> )	4
		Second .....	16	1	5
		Third .....	24	2	6
		Fourth .....	32	3	7
		Fifth .....	40	5	8
		Sixth .....	48	7	9
		Seventh .....	56	9	10
281 to 500.	13	First .....	13	( <sup>2</sup> )	4
		Second .....	26	1	6
		Third .....	39	3	8
		Fourth .....	52	5	10
		Fifth .....	65	7	11
		Sixth .....	78	10	12
		Seventh .....	91	13	14
501 to 1,200.	20	First .....	20	( <sup>2</sup> )	5
		Second .....	40	3	8
		Third .....	60	6	10
		Fourth .....	80	8	13
		Fifth .....	100	11	15
		Sixth .....	120	14	17
		Seventh .....	140	18	19
1,201 to 3,200.	32	First .....	32	1	7
		Second .....	64	4	10
		Third .....	96	8	13
		Fourth .....	128	12	17
		Fifth .....	160	17	20
		Sixth .....	192	21	23
		Seventh .....	224	25	26
More than 3,200.	50	First .....	50	2	9
		Second .....	100	7	14
		Third .....	150	13	19
		Fourth .....	200	19	25
		Fifth .....	250	25	29
		Sixth .....	300	31	33
		Seventh .....	350	37	38

<sup>1</sup> Cumulative number of failures.<sup>2</sup> Lot may not be accepted. Next sample must be tested.**§ 160.066-13 Technical tests.**

(a) The following conditions apply to technical tests as described in this section:

(1) A total of nine signals must be selected at random from the lot being tested;

(2) If the signals are protected by sealed packaging, then the conditioning for the technical tests must be conducted with the signal in the sealed packaging;

(3) If signals in the test sample fail to pass one of the technical tests, the entire lot is rejected;

(4) Signals from “reject lots” may be reworked by the manufacturer to correct the deficiency for which they were rejected and be resubmitted for inspection. Records shall be kept of the reasons for rejection, the reworking per-

formed on the “reject lot”, and the result of the second test. Signals from “reject lots” may not, unless subsequently accepted, be sold or offered for sale as being in compliance with this specification.

(b) The Elevated Temperature, Humidity, and Storage Test must be conducted in the following manner:

(1) Select three signals from the nine;

(2) Place each signal in a thermostatically controlled even-temperature oven held at 55 Degrees C (131 Degrees F), and at not less than 90% relative humidity, for at least 72 hours (If for any reason it is not possible to operate the oven continuously for the 72 hour period, it may be operated at the required temperature and humidity for 8 hours of each 24 during the 72 hour conditioning period.);

(3) After removal from the oven immediately place each signal in a chamber:

(i) At a temperature of at least 20 degrees C (68 degrees F) but not more than 25 degrees C (77 degrees F);

(ii) At not less than 65% relative humidity;

(iii) For ten days;

(4) Then remove each signal from any sealed packaging and fire it.

(5) The test sample fails the test if:

(i) Any signal ignites or decomposes before firing;

(ii) Any signal when fired malfunctions in a manner that would cause burns or injury to an unprotected person firing the signal, or;

(iii) Two or more of the signals fail to project and ignite the pyrotechnic candle.

(c) The Spontaneous Combustion Test must be performed in the following manner:

(1) Select three signals from the remaining six signals and place them in a thermostatically controlled even temperature over for 48 hours at a temperature of 75 degrees C (167 degrees F).

(2) The test sample fails the test if any signal ignites or decomposes during the test.

(d) The Luminous Intensity and Chromaticity Test must be performed in the following manner:

(1) Remove the pyrotechnic candle from the remaining three signals.